

## REMARKS

### I. Claim Objections

Claims 48, 50, 76 and 78 have been amended according to Examiner's objections.

### II. Claim Rejections – 35 USC §102(b)

Examiner has rejected claims 47-51, 53, 54 and 56 under 35 U.S.C. 102(b) as being anticipated by Berndt (2,988,727). The rejection is respectfully traversed for the reasons set forth below.

To anticipate, all elements must be presented and united in the same way to perform the same function. The reference does not recite each limitation of Applicant's invention. Moreover, the elements disclosed by Berndt are neither structurally nor functionally related to the elements claimed by Applicant. In particular, according to claim 47, the dead end comprises the following elements: (1) a compressible body having a cavity, (2) a rigid enclosure to encapsulate the compressible body, (3) a connector that attaches to the rigid enclosure, and (4) a compression implement. In contrast, the Berndt specification discloses a gripping member for line connectors consisting of the following elements: (1) a housing or casing of tubular form; (2) a gripping member within the casing; (3) a coil spring and (4) a cup shaped member.

Applicant does not disclose gripping members. Each gripping member disclosed in the Berndt reference is housed within the tapering end portions of the casing and further comprises a plurality of gripping jaws. The gripping jaws function to "bite" into the wire or cable. (See column 2, lines 42-64). Gripping members are not equivalent to the compressible body disclosed by Applicant. More specifically, the compressible body does not comprise gripping jaws and further, does not function to "bite" into the composite core. Indeed, the mechanism of the gripping jaws in the Berndt application would cause a failure of the core by creating a

plurality of stress concentration points in the composite core under the pressure generated by the jaws as tensile loads are increased. Such pressure may further lead to crushing of the core member. Accordingly, the gripping jaws can not be the same element as the compressible body.

Further, Applicant does not disclose a coil spring. According to the Berndt specification, a coil spring is provided to maintain the gripping members in contact with the tapering walls of the end portions of the casing. That is, the coil spring merely functions to assert pressure on the gripping members so that the gripping members maintain contact with the tapered walls of the casing. (See Column 2, lines 63-67). In contrast, Applicant discloses a compression implement that functions to compress the compressible body. By tightening the compression implement, a compressive force is applied to the compressible body. This compressive force causes a compressive and frictional area of contact between the compressible body and the composite core. The frictional contact extends along the length of the composite core that is within the compressible body. (See paragraph [0043]). It is these compressive and frictional forces that hold the core in the compressible body as opposed to “gripping” and/or “biting” forces as disclosed by Berndt. Moreover, the compressive forces may cause deformation of the compressible body to the extent that the compressible body takes on the form of the internal shape of the rigid enclosure, however, by exerting external forces on the compressible body, the rigid enclosure prevents the compressible body from becoming misshapen when the body is being compressed. (See paragraph [0038]).

Based on the foregoing, the Berndt reference cannot anticipate Applicant’s claim 47 under 35 U.S.C. 102(b). Moreover, because claims 48-51, 53-54 and 56 depend from claim 47 and because claim 47 cannot be anticipated, claims 48-51, 53-54 and 56 cannot be anticipated. As such, Applicant respectfully requests Examiner’s withdrawal of his rejection of the

aforementioned claims as being anticipated by Berndt. Applicant further believes that the claims are in condition for allowance and respectfully requests such from Examiner.

### **III. Claim Rejections – 35 U.S.C. §103(a)**

#### **a. The Moore Patent**

Applicant has amended claims 1, 2, 10-12, 16, 18, 28, 29, 31, 37-38 and canceled claims 17 and 25.

Examiner has rejected claims 1-8, 10-12, 16-19, 22, 24-35 and 37-39 under 35 U.S.C. 103(a) as being unpatentable over Moore (4,627,490). The rejection is respectfully traversed for the reasons set forth below.

The Moore reference is nonanalogous art. A prior art reference must either be in the field of Applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. *See In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The field of Applicant's endeavor is splices and dead ends for connecting high powered cables for the transmission of electricity. In contrast, Moore's field of endeavor is penetrators for wells. In particular, a wellhead apparatus for sealing an electrical power cable for powering downhole electrical equipment while maintaining appropriate pressure differentials. This type of apparatus applies to the drilling industry, such as gas and oil wells. Frequently, gas wells produce an undesirable buildup of water that must be pumped out of the well-bore so as to reduce back-pressure on the producing formation. A popular method of pumping water from this type of gas well utilizes an electrical submersible pump and integral electric motor suspended near the bottom of the well-bore by production tubing. Accordingly, the wellhead must permit a cable to power the pump to pass through the top of the wellhead and effect a vapor tight seal so as to prevent valuable gas from being vented to the atmosphere in order to prevent waste of natural

resources and to prevent fire or explosion around the wellhead. Moore does not provide a fitting to connect electrical cables.

Applicant asserts that wellhead apparatus is vastly different than splices and dead ends for high powered electrical power cables. The technology is different. Applicant's technology provides apparatus' to splice together sections of high voltage, high ampacity cables for electrical power transmission. Moore's technology provides an apparatus to enable the provision of power to an electric tool through a well bore while not allowing gas to escape the well bore. Moore's technology does not require that the power cord maintain a specific tension or be able to maintain a tension load. It merely provides a way to power a tool through a drilled hole.

The problems addressed by the technology differ. While cable lengths for a single strand of cable may cover several thousand feet, a power grid requires several hundred or thousand miles of cable. To span these distances, linemen will splice or couple two smaller cable spans together. Accordingly, the splice must maintain substantial tension, at least about 10,000 pounds. In contrast, Moore's invention permits positioning of tool power cables while not permitting pressure changes within the well.

The field of wells and well bores is vastly different from the field of power grids and electrical power transmission. It has been held, that in considering the field of art, "it is necessary to consider "the reality of the circumstances", *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979)--in other words, common sense--in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor." *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). Applicant asserts that a person of ordinary skill, seeking to solve the problem of connecting spans of power cable capable of withstanding substantial forces, would not reasonably be

expected or motivated to look to the field of well bore barrier penetrator arrangements.

Hindsight may not be applied in order to establish a case for obviousness. In particular, “the combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.” *Id.* at 1447.

Further, the prior art structure must be capable of performing the function of the apparatus of Applicant's invention. In this case, the prior art structure is not capable of meeting the claim. The splices of Applicant's invention must be able to handle tensional forces of at least 10,000 pounds. Accordingly, a frictional force of 33,000 pounds or more must be applied to the composite core. A frictional force is a function of the area under contact, the compressive force of the contact and the coefficient of friction, namely,  $\text{frictional force} = (\text{coefficient of friction}) \times (\text{compressive force}) \times (\text{area})$ . Moore discloses a sleeve that threads into a housing that engages a thrust plate to compress a seal that surrounds the outside diameter of a steel tube that surrounds an electrical power cable. Not only does the arrangement of elements differ, the seal functions merely to prohibit the flow of gases and inhibit penetration of moisture. There is no indication that such an arrangement of elements would provide sufficient frictional force to be able to maintain tensional forces of up to about 33,000 pounds. Therefore, it cannot have been obvious to use the fitting of Moore to connect a first and second aluminum conductor composite core reinforced cable.

Accordingly, Applicant respectfully requests withdrawal of Examiner's rejection of the aforementioned claims as being obvious under Moore.

**b. The Quesnel and Blucher Patents**

Examiner has rejected claims 43-45, 63, 64 and 67-74 under 35 U.S.C. 103(a) as being unpatentable over Quesnel et al. in view of Blucher (2005/0061538). Applicant cancels claims 43-45, 63, 64 and 67-74. Accordingly, Applicant respectfully requests that Examiner place the application in condition for allowance.

**c. The Berndt and Goldsworthy Patents**

Applicant has amended claims 76 and 78.

Examiner has rejected claims 75-79, 81, 82 and 84 under 35 U.S.C. 103(a) as being unpatentable over Berndt in view of Goldsworthy, et al. (2004/0026112). Applicant traverses the rejection and respectfully requests reconsideration based on the following remarks.

The differences between the claimed invention and the prior art are such that the invention as a whole could not have been obvious to one of ordinary skill in the art at the time the invention was made. The combined set of references, i.e., Berndt and Goldsworthy, do not teach or suggest all of the claim limitations. As discussed above, Berndt does not disclose all of the elements of Applicant's apparatus (see argument presented above). Further, the composite core disclosed by Goldsworthy differs substantially from Applicant's. Accordingly, combination of the prior art references cannot teach or suggest all of the claim limitations of Applicant's apparatus.

The suggestions or teaching to make the claimed invention and the reasonable expectation of success must both be found in the prior art. See In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). Applicant's invention addresses particular problems that arise in splicing a composite core. In particular, the composite core comprises a plurality of fibers embedded in a resin matrix. The matrix of fibers and resin creates physical properties that differ from traditional cables thereby rendering many traditional splicing apparatus ineffective. Specifically, known splices use a compression vise and application of excessive pressure to affix the splice to the cable. Such

crimping force could crush the core. Adhesive bonds alone will not work either because they do not spread forces across the entire area of the bond. With the incredible tensional forces on the cables the adhesive bonds tend to fail in successive one inch regions until the entire bond is compromised. These physical attributes must be addressed when designing an apparatus to terminate a composite core cable.

The Berndt patent does not address the physical properties of a composite core such as disclosed by Applicant. In particular, the Berndt patent states, “the invention relates to improvements in connectors for joining wires, cables and the like to effect a strong mechanical and electrical connection and has reference in particular to a novel and improved gripping member.” See column 1, lines 6-11. Such gripping members would be ineffectual on the outer surface of a composite core member. More specifically, the gripping members would create too many stress concentration points in addition to potentially crushing the composite core member under the pressure generated by the jaws as tensile loads are increased. There would also be a significant amount of corrosion induced by dissimilar metals especially considering the electrical environment. The Berndt apparatus leaves the potential for air gaps where current flows. These gaps may lead to corrosion and failure of the connector apparatus. Accordingly, there is no reasonable expectation of success and further, there is no suggestion that the Berndt apparatus will work on a composite core member.

Because the prior art references when combined do not teach each element of Applicant’s invention, and because there is no suggestion to combine the prior art references and no reasonable expectation of success, the obviousness rejection should be withdrawn. Accordingly, Applicant respectfully requests that Examiner withdraw the rejection of claims 75-79, 81, 82 and 84. Applicant further requests that Examiner place the claims in condition for allowance.

**d. Allowable Subject Matter**

Applicant has amended claims 9, 36, 46, 52, 65 and 80 in accordance with Examiner's requirements. Accordingly, Applicant believes that the claims are in condition for allowance.

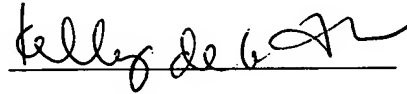
According to the foregoing, the application is believed to be in condition for allowance and such action is requested.

The Examiner is invited to telephone the undersigned if it is believed that such communication will further the prosecution of the application.

Respectfully submitted,

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The McIntosh Group  
8000 E. Prentice Ave. Suite B-6  
Greenwood Village, Colorado 80111  
(303) 689-9560, ext. 11

A handwritten signature in black ink, appearing to read "Kelly de la Torre", is written over a horizontal line.

Kelly de la Torre, *Esq.*  
Reg. No. 53,677